

SID Policy on Configuration Management

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Revision History

REVISION	DATE OF RELEASE	PURPOSE
Initial Draft	April 26, 2004	Initial Release

Approval



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1 INTRODUCTION

1.1 Adoption of SID Policy

As part of its ongoing commitment to process improvement and quality within the division, the Systems Integration Division (SID) is adopting this SID Policy and Standard for Configuration Management. This policy will help to clarify and enhance its current practices, continue to align the organization with the Software Engineering Institute's Capability Maturity Model (SEI's CMM), and ensure compliance with the Department of Finance (DOF) Information Technology Oversight Framework (Budget Letter 03-04), dated 7 February 2003.

1.2 Applicability

[1.2.1]¹ This policy shall apply to all SID projects² effective the date of this policy. Projects that are in the middle of an SID life cycle process³ (at the effective date of this policy) are required to demonstrate due diligence in complying with this policy within 30 days, to the degree that it does not jeopardize their ability to satisfy prior project commitments.

[1.2.2] The SID Assistant Director shall consider special situations for non-compliance on a case-by-case basis.

[1.2.3] Projects requesting a waiver from the requirements in this policy shall comply with the Deviation/Waiver Process (iManage SIDdocs #2484).

[1.2.4] Projects that are in the Maintenance and Operations (M&O) life cycle phase shall, at a minimum, assess and report compliance with this policy on an annual basis.

[1.2.5] All other projects shall, at a minimum, assess and report compliance with this policy at the start of a new life cycle phase.

1.3 References

The following documents were used in the creation of this policy:

¹ Brackets [] are used as a reference designator for explicitly stated policy requirements ("shall's"). The numbers in the brackets are included in the SID Compliance Toolbox (iManage SIDdocs #2093) using a policy reference designator (e.g. PM Policy-1.2.1) for ease of verification and traceability to applicable CMM and TOSU requirements.

² In this document, SID Projects refer only to projects of a statewide nature (e.g. CWS/CMS, CMIPS, EBT, ISAWS, SFIS, etc.) and not to software release projects that are part of a routine Maintenance & Operations life cycle, or internally created projects and initiatives.

³ The SID Best Practices web site defines the typical life cycle for software acquisition projects in the organization. Definitions for each life cycle phase are available at www.bestpractices.cahwnet.gov/processes.htm.

- Information Technology Oversight Framework, Budget Letter 03-04, dated 7 February 2003, Department of Finance – Technology Oversight and Security Unit.
- Software Acquisition Capability Maturity Model (SA-CMM), Version 1.02, April 1999, Software Engineering Institute.
- IEEE Standard 828-1998 – Standard for Software Configuration Management Plans, IEEE.
- SID Policy on Project Management, iManage SIDdocs #2453, 23 February 2004, Systems Integration Division (SID).
- SID Policy on Quality Management, iManage SIDdocs #2514, 26 April 2004, SID.
- SID Policy on Requirements Management, iManage SIDdocs #2451, 26 April 2004, SID.
- SID Policy on Contract Management, iManage SIDdocs #2459, 26 April 2004, SID.
- Best Practices Web Site (BPweb), Systems Integration Division (SID), <http://www.bestpractices.cahwnet.gov>.
 - Glossary and Acronyms, BPweb, SID.

1.4 Compliance Verification

[1.4.1] The SID Best Practices Support Group (BPSG) shall assess compliance to this policy at least annually using the applicable categories of the SID Compliance Assessment Toolbox (iManage SIDdocs #2093). For more information on compliance assessments, refer to the BPSG Project Plan.

1.5 Relationship to Other Policies

This policy is subordinate to the SID Policy on Project Management and refers to the SID Policy on Requirements Management and SID Policy on Contract Management. This policy is closely related to the SID Policy on Quality Management.

2 POLICY STATEMENT

It is the policy of SID to follow, adhere to, and implement proven project management best practices in compliance with the SEI CMM methodology, the DOF IT Project Oversight Framework.

[2.0.1] Project Managers shall comply with the requirements, procedures and processes referenced in this policy document.

2.1 Required Documentation

[2.1.1] Projects shall document their specific approach to configuration management in a Configuration Management Plan in accordance with the SID Configuration Management Template and associated tailoring guidance on the BP website.

[2.1.2] Projects shall update and maintain their Configuration Management Plan until the system is retired or terminated.

[2.1.3] Projects shall produce and manage a minimum set of documentation with a defined hierarchical relationship as specified in the SID Master Project Plan (MPP) Template (iManage SIDdocs #2513).

[2.1.4] Documentation related to configuration management shall be tailored and revised (as appropriate) for the project's phase in accordance with the SID acquisition life cycle phases as defined on the BP website.

[2.1.5] The status of configuration management activities shall be documented and reviewed periodically (such as, at key development milestones and prior to a system release) with the project management team, quality management team, and Project Manager.

[2.1.6] The status of configuration items (CIs) shall be documented and reviewed at least quarterly by the project management team, quality management team, and Project Manager.

[2.1.7] Measurements showing the status of configured items and configuration management activities shall be documented, tracked, and analyzed for trends.

2.2 Configuration Management Roles & Responsibilities

[2.2.1] The Project Manager shall designate a specific individual to fulfill the role of the Configuration/Change Manager.

[2.2.2] The Configuration/Change Manager shall be responsible for implementation of this policy and for all configuration management activities, either directly or by overseeing the work of others, including the development and maintenance of the Configuration Management Plan (based on the SID Configuration Management Plan Template).

[2.2.3] Projects shall tailor their configuration management program for the project's phase in the SID Acquisition Life Cycle in accordance with the SID Configuration Management Plan Template and associated tailoring guidance.

[2.2.4] The configuration management function(s) identified in the model functional organizational chart shall be addressed in the Configuration Management Plan.

For more information, see the model organizational chart and specific roles and responsibilities on the BP website. (Depending on the size and life cycle phase of the project, multiple individuals may perform a role or a single individual may perform multiple roles.)

2.3 Configuration Management Training

[2.3.1] Configuration management staff shall participate in initial and refresher SID Training for Configuration/Change Managers.

Where appropriate, the role of Configuration/Change Manager may be split along configuration item categories to ensure appropriate focus to the item (e.g., Document Manager, Deliverable, Manager, IT Manager, etc.).

[2.3.2] Configuration management staff shall facilitate a project orientation to configuration management as part of the project-specific training plan conducted for all project staff.

2.4 Configuration Management Tools

[2.4.1] At a minimum, the Configuration/Change Manager shall track the configured items in a spreadsheet (e.g., MS Excel).

3 METHODOLOGY FOR CONFIGURATION MANAGEMENT

The requirements for implementing SID's configuration management methodology are defined in the subsequent sections. The major elements of the configuration management methodology are as follows.

- Planning and Identification
- Tracking and Reporting
- Change Control

[3.0.1] The Configuration Management Plan shall describe or reference the specific processes and procedures that will be used to manage the project's configured items.

3.1 Planning and Identification

[3.1.1] The project office shall explicitly describe in their Configuration Management Plan which configuration items are applicable to the project and how the project will manage the identified items.

[3.1.2] Projects shall include the following project office items, prime contractor items, and stakeholder items in their configuration management planning.

The level of rigor applied to the management of each item will differ based on criticality of the item and how much control the project has over the item.

Project Office Items	Prime Contractor Items	Stakeholder Items
Project Office Documentation (plans, processes, funding documents, approval documents, correspondence, etc.)	Delivered Hardware	Legislation/Regulations
Deliverables and Contracts	Delivered Software	Policies
Project Office LAN and network infrastructure	Deliverable Documentation and System Documentation	Hardware/Software Residing in the Counties
Project Office Tools (e.g., MS Office, MTS II, SETS, etc.)	Development Tools, Test and Analysis Tools, M&O Tools, Performance Monitoring Tools	Interfaces with External Systems
Project Web Site(s), Test Environment	Development, Test and Production Environments	
Business Requirements	System/Software Requirements	
Project Work Plans	Contractor Work Plans	

[3.1.3] In cases where the project office does not control a configuration item that is a significant part of the project (e.g., interfaces, production hardware in the counties), the Configuration Management Plan shall describe how the project office participates in the management of these items and who is ultimately responsible for the configuration control of these items.

[3.1.4] The Configuration Management Plan shall describe how configuration items are approved and baselined, where they are stored (e.g., library system, network, hardcopy library, etc.), and how configuration information is communicated and to whom.

[3.1.5] The specific characteristics of each configuration item shall be recorded. Typical characteristics include the title of the item, type of item (e.g., software, hardware, tool, etc.), size, creation date, last saved date, version number, etc.

[3.1.6] The CM Plan shall specifically identify the types of configuration items for the project and, where appropriate, may reference other plans and processes for specific details (e.g., Document Management Plan, Web Site Management Plan, Deliverables Management Process, etc.).

[3.1.7] The project baseline(s) shall be managed through a formal change control process in accordance with the SID Configuration Management Plan Template and associated tailoring guidance provided on the BP website.

[3.1.8] The test environment shall be configured to mirror the production environment.

[3.1.9] The training environment shall mirror the production environment to ensure the users receive the maximum benefit possible from the training.

3.2 Tracking and Reporting

[3.2.1] Status reports shall include a summary of the status of pending change requests (and/or work authorizations⁴) for the configuration items, the status of the baselined items, and any issues or concerns with the baselines or configuration management process.

[3.2.2] The project office shall periodically (minimum of annually) perform an audit of their configuration library and documentation to ensure all expected project and contractor items are present, including appropriate supporting documentation such as approved change request paperwork.

[3.2.3] The Configuration/Change Manager shall evaluate changes to the test environment to determine if deviating from the production environment is appropriate.

3.3 Change Control

[3.3.0.1] Changes to the project baseline(s) shall be done through a formal change control process in accordance with the project Configuration Management Plan.

[3.3.0.2] The Configuration Management Plan shall describe the project's approach to change control for identified items.

The approach to change control for each item will differ based on criticality of the item, level of control over the item, and the stakeholders involved. For instance, changes to a project office document are usually reviewed and approved through an internal review process; while system changes are reviewed by a Change Control Board (see below).

[3.3.0.3] Requirements changes shall be carefully considered for impacts to the project including the system, documentation, schedule, cost, resources and available skill sets, and work in progress.

For additional information refer to the SID Policy on Requirements Management and the project Requirements Management Plan.

Approval of a requirements change does not necessarily include approval of software changes. In some cases, additional analysis is required to determine the best approach to addressing the implementation of the requirement. The actual software changes would still need to be tested and verified for correctness and completeness prior to final approval.

⁴ Work authorizations are formal notices of tasking, usually used to clarify specific detailed activities and/or deliverables for a contract where the period of performance and dollar amount are fixed, but the scope of work is set at a high-level (such as for a maintenance and operations contract). Refer to the SID Policy on Contract Management and the Contract Management Plan for more on work authorizations.

3.3.1 Change Control Board

[3.3.1.1] A Change Control Board (CCB) shall be established to consider and approve/disapprove changes to the configuration items as defined by the project configuration management plan.

[3.3.1.2] The CCB Chairperson shall be a state employee, where possible. The CCB may be comprised of state and contractor/consultant staff.

[3.3.1.3] If the CCB Chairperson is a consultant, the final CCB decision shall be reviewed and approved by a state manager.

[3.3.1.4] Proposed changes to a baselined item shall be documented and analyzed for impacts as described in the Configuration Management Plan prior to approval/disapproval by the CCB.

[3.3.1.5] An impact analysis shall be used to determine if a configuration item should or should not be changed.

[3.3.1.6] Appropriate stakeholders (including the customer/user) shall be included in the discussion of applicable configuration item changes.

[3.3.1.7] When applicable, stakeholders shall be consulted when prioritizing and scheduling approved configuration changes for implementation.

[3.3.1.8] The CCB shall determine the system version the change should be included in, and when the version shall be released to the users.

[3.3.1.9] The Configuration/Change Manager shall manage and track changes to the system environments (e.g., development, test, training, production, etc.).

3.3.2 Interface⁵ Control

[3.3.2.1] Project-developed interfaces shall be documented.

[3.3.2.2] Hardware, system software and support software, as well as products, deliverables and other related projects and interfaces, shall be examined for potential interfacing effects on the project.

[3.3.2.3] The interfaces shall be controlled through a CCB which is comprised of the stakeholders of the interface(s).

[3.3.2.4] Specific emphasis shall be placed on the coordination, implementation and testing of external interface changes in a test environment (with the interfacing organization(s)) prior to implementing the change in a production environment.

⁵ Interfaces shall mean interfaces from the project system to other systems (e.g. EBT system interface to the SAWS systems).

3.3.3 Contractor/Subcontractor Control

[3.3.3.1] The project shall periodically audit the prime contractor and any appropriate subcontractors to ensure they are complying with the requirements for configuration management as stipulated in the contract, RFP, and/or Statement of Work.

[3.3.3.2] The CM Plan shall define the activities to integrate all system components (particularly those developed by different contractors/subcontractors) into the primary system, and describe the change control process to ensure changes in the individual items are coordinated with all appropriate organizations.

[3.3.3.3] Consultant and contractor staff working at the project office site shall comply with the project's Configuration Management Plan and processes.